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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,510	03/23/2001	Neal E. Cammy	105276	6267
23490	7590	03/25/2004	EXAMINER	
JOHN G TOLOMEI, PATENT DEPARTMENT UOP LLC 25 EAST ALGONQUIN ROAD P O BOX 5017 DES PLAINES, IL 60017-5017			GRIFFIN, WALTER DEAN	
			ART UNIT	PAPER NUMBER
			1764	
DATE MAILED: 03/25/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/816,510

Applicant(s)

CAMMY ET AL.

Examiner

Walter D. Griffin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 March 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/23/01, 7/29/01</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-11, drawn to an FCC apparatus, classified in class 422, subclass 139.
- II. Claims 12-20, drawn to a process for fluidized catalytic cracking of hydrocarbons, classified in class 208, subclass 113.

The inventions are distinct, each from the other because of the following reasons:

Inventions of Group II and Group I are related as process and apparatus for its practice.

The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the apparatus as claimed can be used to practice another process in which no relationship between the circulation rates is determined or controlled to a preset condition.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with James Paschall on March 10, 2004, a provisional election was made with traverse to prosecute the invention of Group II, claims 12-20.

Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-11 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 12-17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Gerhold (US 3,888,762).

The Gerhold reference discloses an FCC process in which a hydrocarbon feed contacts a spent and regenerated catalyst mixture in the base of a riser reactor. The feed and catalyst are then passed through the riser to produce a product and a spent catalyst. The product and the spent catalyst are then separated, the spent catalyst is stripped, and a portion of the spent catalyst is recycled to the riser reactor and another portion of the spent catalyst is sent to a regeneration zone. Regenerated catalyst is then sent to the riser reactor. Gerhold discloses that a refiner can directly vary catalyst activity by controlling coke on catalyst and thereby control product yields. This is done by decreasing or increasing the amount of spent catalyst recycled to the riser. Clearly, the amount of each type of catalyst passed to the riser must be measured and there

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would necessarily be a ratio of the two catalysts. Therefore, the examiner asserts that the Gerhold reference discloses that the circulation rates of each type of catalyst are measured. The ratio of spent catalyst to regenerated catalyst in the riser reactor is controlled by opening and closing slide valves on the conduits carrying the separated catalyst streams. See col. 2, line 48 through col. 3, line 19; col. 5, line 62 through col. 6, line 7; col. 8, lines 47-54; and the Figure.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerhold (US 3,888,762) in view of Thompson (US 4,234,411).

The Gerhold reference discloses an FCC process in which a hydrocarbon feed contacts a spent and regenerated catalyst mixture in the base of a riser reactor. The feed and catalyst are then passed through the riser to produce a product and a spent catalyst. The product and the spent catalyst are then separated, the spent catalyst is stripped, and a portion of the spent catalyst is recycled to the riser reactor and another portion of the spent catalyst is sent to a regeneration zone. Regenerated catalyst is then sent to the riser reactor. Gerhold discloses that a refiner can directly vary catalyst activity by controlling coke on catalyst and thereby control product yields. This is done by decreasing or increasing the amount of spent catalyst recycled to the riser. Clearly, the amount of each type of catalyst passed to the riser must be measured and there would necessarily be a ratio of the two catalysts. Therefore, the examiner asserts that the Gerhold reference discloses that the circulation rates of each type of catalyst are measured. The ratio of spent catalyst to regenerated catalyst in the riser reactor is controlled by opening and closing slide valves on the conduits carrying the separated catalyst streams. See col. 2, line 48 through col. 3, line 19; col. 5, line 62 through col. 6, line 7; col. 8, lines 47-54; and the Figure.

The Gerhold reference does not disclose the recycle catalyst controller.

The Thompson reference discloses that temperature controller can control the passage of catalyst to a riser in an FCC process. See col. 1, lines 63-68 and col. 3, line 28 through col. 4, line 7.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Gerhold by using a controller such as

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disclosed by Thompson because a controller disclosed by Thompson suitably regulates the passage of catalyst thereby controlling the products from the process.

Regarding specific settings for the controller, one of ordinary skill would use any setting that provides the desired result of optimization of the FCC process.

### *Conclusion*

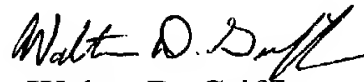
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art not relied upon discloses FCC processes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is (571) 272-1447. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Walter D. Griffin  
Primary Examiner  
Art Unit 1764

WG  
March 18, 2004